

REMARKS/ARGUMENTS

Claim 1 was rejected under 35 USC 112, first paragraph, for not enabling a PLL or phase locked loop. The applicant notes that claim 1 is amended to require a more generic “circuitry for upconverting”. Support therefor is replete throughout the specification wherein an oscillation is provided to a mixer to upconvert the frequency of an outgoing signal.

Claim 15 was rejected 35 USC 112, first paragraph, for not enabling “transmitting ID information” during in an initial FSK modulation mode. Responsive thereto, the applicants note that the originally filed text for the Summary of the Invention has been moved to the Detailed Description section of the application. The text, as inserted in the Detailed Description is the same as what was in the Summary with the exception that language has been added to provide support for “transmitting ID information”. No new matter is added as the “transmitting ID information” originally appeared in claim 15.

Claims 1-3, 8-14, and 19-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Schwartz et al. (US Patent 5,945,885) in view of Yang et al. (US 7,173,982) and further in view of Balasubramaniyan et al. (US 7,209,720). In support of this rejection, the official action copies a substantial portion of claim 1 and alleges that Schwartz teaches the same.

Before engaging in a detailed analysis of what is claimed, the applicant notes that the specification generally teaches an RF transmitter intended to support both frequency shift keying (FSK) and phase-shift keying (PSK) modulation techniques in a smooth and continuous manner that does not violate spectral mask requirements and that maintains. The described embodiments of the invention support continuous modulation switching both ways, i.e., from FSK to PSK and from PSK to FSK. Schwartz does not teach or suggest a structure that supports such switching without violating spectral mask requirements.

Examining Figure 5 of the present application, it may be seen that pulse shaping block 112 produces FSK phase information as well as PSK modulated data to phase accumulator 114 and mux 116, respectively. Mux 116 further receives a logic 1 and a logic 0. Based upon a mux control signal received from modulation switching control 118, mux 116 produces the PSK modulated data or the logic 1 and logic 0 as PSK data to CORDIC 118. Phase accumulator 115 produces the phase accumulated FSK to the phase input of CORDIC 118. Accordingly, CORDIC 118 always receives PSK data and FSK data regardless of the mode of operation. As

such, hard transitions and corresponding spectral mask violations are avoided. Examining Figure 5 of Schwartz, for example, the polar to rectangular converter input switches from phase accumulated data to I filtered symbol values.

Claim 1, as originally constituted, requires:

a Coordinate Rotation Digital Computer (CORDIC) block coupled to receive the accumulated phase value and further coupled to receive the I and Q modulated data <emphasis added>.

Claim 11, as originally constituted, requires:

the pulse shaping block producing FSK modulated TX data and PSK I and Q channel modulated data concurrentl <emphasis added>.

Claim 21, as originally constituted, requires:

transmitting communication signals with the remote agent according to the first and second modulation techniques at the second data rate during a transition period <emphasis added>.

As described above, Schwartz does not teach this concurrent transmission of data for both modulation or transmission modes.

The official action states that Yang teaches a CORDIC block coupled to receive the accumulated phase value and further coupled to receive the I and Q modulated data to produce I and Q channel signals reflecting a phase and magnitude based upon the accumulated phase value and I and Q modulated data (col. 2; lines 42-64; Figures 3 and 4).

The applicants disagree regarding Yang. Yang very clearly shows two accumulators. One that accumulates the I component and one that accumulates Q component. The description of Figure 3 states that these accumulators, in conjunction with the shift registers, produce a rotated pointer. Yang does not show a CORDIC that receives FSK phase information and PSK modulated data at the same time (concurrently).

As the cited art does not teach what is claimed in the independent claims of the present application, as shown above, it is believed that all of the independent claims and their dependent claims are allowable and overcome the grounds of rejection stated in the official action.

The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Garlick Harrison & Markison Deposit Account No. 50-2126 (reference docket BP4091).

RESPECTFULLY SUBMITTED,

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